stated that they do not have the space available at the Whiting refinery to expand their wastewater treatment plant to further enhance its ability to remove ammonia from the wastewater.

BP provided an explanation of their rationale for needing to increase the final effluent limits for ammonia as N as follows:

BP studied the influent and effluent values for ammonia at their Whiting refinery for the period from 2001 to 2005 to determine the long-term average influent and effluent. The influent has a long-term averaging influent loading of 1,668 lbs/day based on a review of operational data from 2003 to 2005 and the wastewater treatment plant has a long-term average removal rate of 70 %. The majority of the new ammonia influent loading will come from the sour water stripper bottoms. To determine the long-term average effluent loading, all of the estimated and known ammonia influent loading values were added up and the conservative 70% removal rate was used to estimate the ammonia effluent loading.

In the addendum to the Case-by-Case Antidegradation Analysis submitted on December 12th, BP enhanced their rationale for the estimated increase in the influent ammonia from the sour water stripper bottoms to account for the increase in the ammonia concentration leaving the sour water stripper bottoms. In the original antidegradation analysis, BP estimated that the ammonia influent loading from sour water stripper bottoms would increase from 248 lbs/day to 900 lbs/day based on the increased flow from the sour water stripper bottoms (3.6 MGD x 8.34 x 30 mg/l = 900 lbs/day). This increased loading does not appear to account for the increase in the concentration from 30 mg/l to 80 mg/l in the sour water stripper bottoms. In the addendum to the Case-by-Case Antidegradation Analysis, BP estimates the influent ammonia loading from the sour water stripper bottoms to be 2,402 lbs/day based on the concentration going from 30 mg/l to 80 mg/l. The estimated ammonia influent loading increase due to the CXHO configuration and the increase in the concentration of ammonia from the sour water stripper bottoms is 2,402 lbs/day – 248 lbs/day = 2,154 lbs/day.

The estimated influent ammonia loading to the WWTP will be 2,154 + 1668 = 3,822 lbs/day. The estimated long term average effluent ammonia loading using the average ammonia removal rate of 70%, will be 1,147 lbs/day.

The application of statistics to develop a monthly average effluent limit which should be achieved 95% of the time and a daily maximum effluent limit which should be achieved 99% of the time results in a monthly average effluent limit for ammonia as N of 1,584 lbs/day and a daily maximum effluent limit of 3,572 lbs/day. This rationale is based on Section 5.5.4. of EPA's Technical Support Document for Water Quality-based Toxic Control (EPA/505/2-90-001) when developing a permit limit based on probability. As stated in this section, "the probability levels for deriving permit limits have been used historically in connection with development of the effluent limits guidelines and have been upheld in legal challenges to the guidelines."

To account for the possibility that the estimated effluent loading of ammonia as N is greater than anticipated, the permit will include a re-opening clause that allows BP to adjust the monthly average and daily maximum effluent limits using actual effluent data after the refinery has been re-configured to process the CXHO. The demonstration, made in accordance with 327 IAC 5-2-11.7(a)(1)(B)(iv), that the increased discharge limits for ammonia are necessary and that the action responsible for the increased discharge of ammonia provides social or economic benefits

to the area in which the discharge occurs has been made. Therefore, it is not necessary to make the same demonstration that the increased permit limits are necessary and that they provide social or economic benefits again for the same action which resulted in the increased discharge limitations for ammonia contained in this permit. The demonstration to satisfy the provision of 327 IAC 5-2-10(11)(B)(i) that the increased discharge limits for ammonia are the result of material and substantial alternations or additions to the facility has been made. Therefore, it is not necessary to make the same demonstration again for the same action which resulted in the increased discharge limitations for ammonia contained in this permit. However, the permittee must demonstrate that any proposed increase in effluent limits for ammonia is due to new information that was not available at the time of this permits issuance. The following re-opening clause will be included in the permit:

This permit may be modified, or alternately, revoked and reissued, after public notice and opportunity for hearing:

3. to incorporate increased monthly average and daily maximum effluent limitations for ammonia as N for Outfall 005 based on a 95th Percentile Probability Basis for the monthly average and a 99th Percentile Probability Basis for the daily maximum using effluent data after the refinery has been re-configured to process Canadian Extra Heavy Crude Oil. The permittee is not required to make a new demonstration, under 327 IAC 5-2-11.7, that the discharge is necessary and that it supports social or economic development in the area of the discharge. It is also not necessary to support the provisions in 327 IAC 5-2-10(11)(B)(i) for any proposed increase in the effluent limitations for ammonia that is attributable to the same action which resulted in the increased discharge limitations for ammonia contained in this permit. The permittee must demonstrate that any proposed increase in effluent limits for ammonia is based on new information that was not available at the time of this permits issuance. The increased discharge limits shall be limited to the minimum necessary and must comply with the more stringent of effluent limitation guidelines and water quality standards.

The effluent limits for Total Suspended Solids (TSS) need to be increased due to the increase in solids to the WWTP from the increased coking and desalting. BP North America will be implementing a brine treatment system at the pipe stills and will also be upgrading the final filters at the WWTP. The maximum monthly average effluent loading of TSS is 2,975 lbs/day and the existing monthly average effluent limit is 3,646 lbs/day. BP North America utilized data from their Toledo refinery, which processes CXHO crude to demonstrate that the TSS effluent loading has the potential to increase by as much as 654%. Therefore the TSS limits will be increased to the limits based on the federal effluent guidelines using the CXHO configuration: 4,925 lbs/day as the monthly average and 7,723 lbs/day as the daily maximum.

Bypass of the Diffuser

BP does not anticipate the need to utilize a routine bypass of the diffuser (Outfall 005). The sump and pump system for the discharge of effluent through the diffuser has been engineered to allow the performance of any routine maintenance for the sluice gates without having to bypass the diffuser Outfall 005. Adequate pumping and design capacities have been included in the engineering scope of work to minimize/eliminate

any diffuser bypass due to pump maintenance activities. In addition, annual routine inspections of the diffuser pipeline and diffuser header (including ports and risers) will be conducted to ascertain any anomalies and/or damage while the diffuser is in operation (i.e., no bypass is necessary for inspection). However, there may be occasion where results of the inspection indicate a bypass is needed for emergency repairs or replacement of damaged parts of the diffuser, pumping system, or pipeline operating system. If such an emergency occurs and a short term bypass is needed, treated process wastewater flows will be routed back to their present (pre-diffuser) discharge location at the shoreline of Lake Michigan via Outfall 001. Permit limitations for Outfall 005 will remain in effect for the duration of the bypass. In accordance with Part II.B.2, BP will notify IDEM when the bypass is about to occur, no later than 10 days prior to the bypass, if possible. BP will provide a report to IDEM after the discharge is once again sent through the diffuser Outfall 005 which describes the length of the bypass and any adverse impacts observed during the bypass. BP will do everything feasibly possible to try to perform any repairs and replacements while the diffuser remains in operation, however it is possible that some repairs and replacements will warrant a bypass of the effluent flow from the diffuser Outfall 005 to Outfall 001.

Outfall 002

TABLE I
Numeric Discharge Limitations, Sampling, and Monitoring Requirements

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
TOC (Intake)	-	-	-	Report	Report	mg/l	1 x Yearly	Grab
TOC (Discharge)	-	-	-	Report	Report	mg/l	1 x Yearly	Grab
TOC (Net)	-	-	-	Report	5.0	mg/l	1 x Yearly	Grab
Total Residual Chlorine	20.0	60.0	lbs/day	0.01	0.02	mg/l	1 x Weekly	Grab
Oil and Grease	-	-	-	Report	5.0	mg/l	1 x Monthly	Grab
Temperature								
Intake	-	-	-	Report	Report	BTU/Hour	5 x Weekly	Hourly
Discharge	-	-	-	Report	Report	BTU/Hour	5 x Weekly	Hourly
Net (daily average)	-	-	-	1.7×10^9	2×10^9	BTU/Hour	5 x Weekly	Hourly
pH	-	-	-	-	[1]	s.u.	3 x Weekly	Grab

[1] The pH of the effluent shall be no less than 6.0 and no greater than 9.0 standard units (s.u.).

Flow

This parameter is required of all NPDES permits and is included in this permit in accordance with 327 IAC 5-2-13(a)(2).

Total Organic Carbon TOC

The limitation for TOC is based on the U.S. EPA effluent guidelines 40 CFR Part 419.43(e) for discharges of once through non-contact cooling water. TOC shall be limited on a net basis in accordance with 327 IAC 5-2-11(f). This limitation is identical to the limitation in the existing permit. This limit has never been exceeded, therefore the monitoring frequency has been reduced to 1 x Yearly which is the minimum monitoring frequency allowed.

Oil and Grease

The requirement to have no oil and grease greater than 5 mg/l is a technology based effluent limit developed in accordance with 327 IAC 5-5-2 recognizing that there should be no oil and grease introduced into the once-through cooling water. This parameter was a net limit in the previous permit but the reported data has established that the intake does not contain any oil and grease which makes the net limit approach unnecessary. The reported data has never shown the presence of oil and grease, therefore the monitoring frequency has been reduced to 1 x Monthly.

Total Residual Chlorine

The water quality based effluent limitation for continuous total residual chlorine is based on the water quality standards in 327 IAC 2-1.5-8, Table 8-1.

The water quality based effluent limits for chlorine are less than the limit of quantitation (LOQ) of 0.06 mg/l. In accordance with 327 IAC 5-2-11.6(h), the permittee will be considered to be in compliance with the WQBELs if the effluent concentrations measured are less than the LOQ of 0.06 mg/l.

Parameter	Test Method	LOD	LOQ
Chlorine	4500-Cl-D	0.02 mg/l	0.06 mg/l
	4500-Cl-E	0.02 mg/l	0.06 mg/l
	4500-Cl-G	0.02 mg/l	0.06 mg/l

Case-Specific LOD/LOQ

The permittee may determine a case-specific LOD or LOQ using the analytical method specified above, or any other test method which is approved by the Commissioner prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner. BP has submitted their procedure/program for minimizing the amount of chlorine being discharged, therefore the requirement to submit a pollutant minimization program will not be included in the permit.

Temperature

The net temperature shall be calculated by subtracting the temperature value of the intake water from the temperature value of the gross discharge every hour and averaging those values over the 24 hours of each day when sampling occurs. These alternate limits were developed as a part of the 316(a) approval given to the previous owner of this facility (Amoco Oil Company) on June 16, 1975 by the U.S. EPA.

pH

This parameter is required of all NPDES permits and is included in this permit in accordance with 327 IAC 2-1.5-8(c)(2). pH must be maintained between 6 to 9 standard units. The effluent shall be sampled 3 x weekly using a grab sample.

Zebra Mussel Control

The zebra mussel kill program is used for the purpose of killing both adult and juvenile mussels in the refinery once through cooling water system. This kill will be accomplished by a continuous feed of sodium hypochlorite on a periodic basis throughout the summer and fall. Sodium hypochlorite feed will be controlled to maintain 0.75 – 1.0 mg/l total residual chlorine (TRC). De-chlorination will occur using Sodium Bisulfite prior to discharge.

Outfalls 003 and 004

TABLE I
Numeric Discharge Limitations, Sampling, and Monitoring Requirements

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
TOC	-	-	-	Report	110	mg/l	1 x Weekly	Grab
Oil and Grease	-	-	-	Report	15	mg/l	1 x Weekly	Grab
pH	-	-	-	-	[1]	s.u.	1 x Weekly	Grab

[1] The pH of the effluent shall be no less than 6.0 and no greater than 9.0 standard units (s.u.).

Flow

This parameter is required of all NPDES permits and is included in this permit in accordance with 327 IAC 5-2-13(a)(2).

TOC

The effluent limitations for TOC are based on 40 CFR Part 419.43(f) for contaminated runoff.

Oil and Grease

The previous fact sheet stated that the effluent limits for Oil and Grease are based on Indiana Water Quality Standards. The daily maximum limit of 15 mg/l is also equivalent to the technology-based effluent limitation for oil and grease developed in accordance with 327 IAC 5-5-2 representing the permit writer's best professional judgment of the best available treatment.

pH

This parameter is required of all NPDES permits and is included in this permit in accordance with 327 IAC 2-1.5-8(c)(2). pH must be maintained between 6 to 9 standard units. The effluent shall be sampled 1 x weekly using a grab sample.

Storm Water Pollution Prevention Plan (SWPPP)

"According to 40 CFR 122.26(b)(14)(ii), facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283), 29, 311, 32 (except 323), 33, 3441, 373 are considered to be engaging in 'industrial activity' for purposes of 40 CFR 122.26(b). Therefore, the facility is required to have all storm water discharges associated with industrial activity permitted." The permit will contain the requirement to develop a storm water pollution prevention plan within eighteen months after the permit becomes effective. This requirement is found in Part I.D. of the permit.

Water Treatment Additives

The following water treatment additives have been approved for use at this facility: 71-D5 PLUS Antifoam, BPB 55715, BPB 59316, BPB 59396, BPB59430, BPB 59455, BPB 59460, BPB 59466, BPB 59470, BPC 60005, BPC 65500, BPC 65610, BPC 67015, BPC 67280, BPC 67375, BPC 67385, BPC 67525, BPC 68095, BPC 68160, BPC 68970, BPW 75890, BPW 76030, BPW 76453, BT-3000, BT-4000, CL2OUT1100, Cronox 245 ES, Demand Trac 480, Ferriclear, Guardion 9405, Magnafloc E 30, Magnafloc LT7996, Nalco 352 Neutraling Amine, Nalco 73202, Nalco 8306 PLUS, Phosphoric Acid Solution, Potassium Permanganate, Praestol 187K, Praestol K122L, Praestol K230FL, Praestol K260FL, Praestol A304OL, Sodium Bisulfite - 40%, Sodium Hypochlorite, SPC 880, ST70, Stabrom 909, SUR-GARD 1700, Zetag 7848, Zetag 7875, FS2550% Caustic solution and Sulfuric acid solution, Elimin-Ox and Triact 1800, Sodium Hydroxide, Hydrochloric acid and Zinc Chloride - 50%.

Spill Response and Reporting Requirement

Reporting requirements associated with the Spill Reporting, Containment, and Response requirements of 327 IAC 2-6.1 are included in Part II.B.2.c. and Part II.C.3. of the NPDES permit. Spills from the permitted facility meeting the definition of a spill under 327 IAC 2-6.1-4(15), the applicability requirements of 327 IAC 2-6.1-1, and the Reportable Spills requirements of 327 IAC 2-6.1-5 (other than those meeting an exclusion under 327 IAC 2-6.1-3 or the criteria outlined below) are subject to the Reporting Responsibilities of 327 IAC 2-6.1-7.

It should be noted that the reporting requirements of 327 IAC 2-6.1 do not apply to those discharges or exceedances that are under the jurisdiction of an applicable permit when the substance in question is covered by the permit and death or acute injury or illness to animals or humans does not occur. In order for a discharge or exceedance to be under the jurisdiction of this NPDES permit, the substance in question (a) must have been discharged in the normal course of operation from an outfall listed in this permit, and (b) must have been discharged from an outfall for which the permittee has authorization to discharge that substance.

Prepared by Steve Roush

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

June 21, 2007

VIA CERTIFIED MAIL 7002 0510 0003 0026 2985

Mr. Dan Sajkowski, Business Unit Leader
BP Products North America, Inc.
Whiting Business Unit
Mail Code 062
2815 Indianapolis Blvd.
Whiting, IN 46394

Re: NPDES Permit No. IN0000108
BP Products North America, Inc.
Whiting, Indiana Lake County

Dear Mr. Sajkowski:

Your application for a National Pollutant Discharge Elimination System (NPDES) permit for authorization to discharge into the waters of the State of Indiana has been processed in accordance with Section 402 and 405 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251, et seq.), and IC 13-15, IDEM's permitting authority. All discharges from this facility shall be consistent with the terms and conditions of this permit.

One condition of your permit requires periodic reporting of several effluent parameters. These forms are available on the internet at the following web site:

http://www.in.gov/idem/compliance/water/wastewater/compeval/forms/index.html.

Additionally, you will soon be receiving a supply of the computer generated preprinted federal NPDES DMR forms. Both the state and federal forms need to be completed and submitted on a routine basis. If you do not receive the preprinted DMR forms in a timely manner, please call this office at 317-232-8670.

Another condition which needs to be clearly understood concerns violation of the effluent limitations in the permit. Exceeding the limitations constitutes a violation of the permit and may subject the permittee to criminal or civil penalties. (See Part II A.2.) It is therefore urged that your office and treatment operator understand this part of the permit.

A response to the comments pertaining to the draft NPDES permit is contained in the Post Public Notice Addendum. The Post Public Notice Addendum is located at the end of the Fact Sheet.

It should also be noted that any appeal must be filed under procedures outlined in IC 13-15-6, IC 4-21.5, and the enclosed Public Notice. The appeal must be initiated by filing a petition for administrative review with the Office of Environmental Adjudication (OEA) within eighteen (18) days of the mailing of this letter by filing at the following address:

Office of Environmental Adjudication
Indiana Government Center North
100 North Senate Avenue, Room 1049
Indianapolis, IN 46204

Please send a copy of any written appeal to me at the IDEM, Office of Water Quality - Mail Code 65-42, 100 North Senate Avenue, Indianapolis, Indiana 46204-2251.

If you have any questions concerning the permit, please contact Mr. Steve Roush at 317/233-5747. Questions concerning appeal procedures should be directed to the Office of Environmental Adjudication, at 317/232-8591.

Sincerely,

Bruno Pigott
Assistant Commissioner
Office of Water Quality

Enclosures
cc: U.S. EPA, Region V
Lake County Health Department

STATE OF INDIANA

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq., the "Act"), and IDEM's authority under IC13-15,

BP PRODUCTS NORTH AMERICA INC.
WHITING REFINERY

is authorized to discharge from a petroleum refinery that is located at 2815 Indianapolis, Blvd., Whiting, Indiana to receiving waters named Lake Michigan and the Lake George Branch of the Indiana Harbor Ship Canal in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II and III hereof.

Effective Date: August 1, 2007

Expiration Date: July 31, 2012

In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit such information and forms as are required by the Indiana Department of Environmental Management no later than 180 days prior to the date of expiration.

Signed on this ____ day of June 21, 2007 for the Indiana Department of Environmental Management.

Bruno Pigott
Assistant Commissioner
Office of Water Quality

TREATMENT FACILITY CLASSIFICATION

The discharger has a Class D industrial wastewater treatment plant, classified in accordance with 327 IAC 5-22, Classification of Wastewater Treatment Plants.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting until the Alternate Mixing Zone is operational or the expiration date, whichever occurs first, the permittee is authorized to discharge from Outfall 001 (At the shoreline of Lake Michigan). The discharge is limited to treated process wastewater from the refinery and from Ineos and NiSource - Whiting Clean Energy, recovered ground water, and most of the storm water from the site. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into Lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS OUTFALL 001 [1][3]

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
BOD_5	4,161	8,164	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
TSS	3,646	5,694	lbs/day	Report	Report	mg/l	2 x Weekly	24 Hr. Comp.
COD	30,323	58,427	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Oil and Grease	1,368	2,600	lbs/day	Report	Report	mg/l	1 x Weekly	Grab
Ammonia as N [7]								
Interim	1,030	2,060	lbs/day	Report	Report	mg/l	5 x Weekly	24 Hr. Comp.
Final	88	196	lbs/day	0.49	1.1	mg/l	5 x Weekly	24 Hr. Comp.
Benzo(a)pyrene [7]								
Interim[10]	Report	Report	lbs/day	Report	Report	ng/l	1 x Monthly	24 Hr. Comp.
Final	0.017	0.041	lbs/day	96	230	ng/l	1 x Weekly	24 Hr. Comp.
Chloride [7]								
Interim[10]	Report	Report	lbs/day	Report	Report	mg/l	1 x Monthly	24 Hr. Comp.
Final	33,575	67,508	lbs/day	188	378	mg/l	1 x Weekly	24 Hr. Comp.

DISCHARGE LIMITATIONS OUTFALL 001

Parameter	Quantity or Loading Monthly Average	Quantity or Loading Daily Maximum	Units	Quality or Concentration Monthly Average	Quality or Concentration Daily Maximum	Units	Monitoring Measurement Frequency	Requirements Sample Type
Total Chromium[4] [7]								
Interim	23.9	68.53	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Final	18	37	lbs/day	0.1	0.2	mg/l	1 x Weekly	24 Hr. Comp.
Hex. Chromium[5] [7]								
Interim	2.01	4.48	lbs/day	Report	Report	mg/l	1 x Weekly	Grab
Final	1.6	3.2	lbs/day	0.009	0.018	mg/l	1 x Weekly	Grab
Total Copper [7]								
Interim[10]	Report	Report	lbs/day	Report	Report	mg/l	1 x Monthly	24 Hr. Comp.
Final	1.8	3.6	lbs/day	0.01	0.02	mg/l	1 x Weekly	24 Hr. Comp.
Total Dissolved Solids [7]								
Interim[10]	Report	Report	lbs/day	Report	Report	mg/l	1 x Monthly	24 Hr. Comp.
Final	109,655	220,025	lbs/day	614	1,232	mg/l	1 x Weekly	24 Hr. Comp.
Fluoride [7]								
Interim[10]	Report	Report	lbs/day	Report	Report	mg/l	1 x Monthly	24 Hr. Comp.
Final	146	286	lbs/day	0.82	1.6	mg/l	1 x Weekly	24 Hr. Comp.
Total Lead [7]								
Interim[10]	Report	Report	lbs/day	Report	Report	mg/l	1 x Monthly	24 Hr. Comp.
Final	1.4	2.9	lbs/day	0.0081	0.016	mg/l	1 x Weekly	24 Hr. Comp.
Total Mercury [8]								
Interim[10]	Report	Report	lbs/day	Report	Report	ng/l	2 x Yearly	Grab
Final [6]	0.00023	0.00057	lbs/day	1.3	3.2	ng/l	6 x Yearly	Grab
Phenolics (4AAP)	20.33	73.01	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Phosphorus	Report	Report	lbs/day	Report	1.0	mg/l	1 x Weekly	24 Hr. Comp.
Total Selenium [7]								
Interim[10]	Report	Report	lbs/day	Report	Report	mg/l	1 x Monthly	24 Hr. Comp.
Final	0.73	1.5	lbs/day	0.0041	0.0082	mg/l	1 x Weekly	24 Hr. Comp.
Total Strontium [7]								
Interim[10]	Report	Report	lbs/day	Report	Report	mg/l	1 x Monthly	24 Hr. Comp.
Final	125	250	lbs/day	0.7	1.4	mg/l	1 x Weekly	24 Hr. Comp.
Sulfate								
Interim[10]	Report	Report	lbs/day	Report	Report	mg/l	1 x Monthly	24 Hr. Comp.
Final	36,611	73,401	lbs/day	205	411	mg/l	1 x Weekly	24 Hr. Comp.
Sulfide	23.1	51.4	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Total Vanadium [7]								
Interim[10]	Report	Report	lbs/day	Report	Report	mg/l	1 x Monthly	24-Hr. Comp.
Final	1.8	3.6	lbs/day	0.0098	0.02	mg/l	1 x Weekly	24 Hr. Comp.
pH [2]					Report	s.u.	3 x Weekly	Grab

DISCHARGE LIMITATIONS OUTFALL 001

Parameter	Quantity or Loading Monthly Average	Quantity or Loading Daily Maximum	Units	Quality or Concentration Monthly Average	Quality or Concentration Daily Maximum	Units	Monitoring Measurement Frequency	Requirements Sample Type
Whole Effluent Toxicity [7][9]								
Interim								
Acute	-	-	-	-	Report	TUa	2 x Yearly	
Chronic	-	-	-	Report	-	TUc	2 x Yearly	
Final								
Acute	-	-	-	-	1.0	TUa	2 x Yearly	
Chronic	-	-	-	1.0	-	TUc	2 x Yearly	

[1] In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 001, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[2] The pH of the effluent shall be no less than 6.0 and no greater than 9.0 standard units (s.u.).

[3] See Part I.B. of the permit for the Narrative Water Quality Standards.

[4] Chromium is to be analyzed by test method which will measure the total quantity.

[5] Hexavalent Chromium shall be measured and reported as dissolved metal. The Hexavalent Chromium sample type shall be grab method. The maximum holding time for a Hexavalent Chromium sample is 24 hours (40 CFR 136.6 Table IB). Therefore, the grab sample must be analyzed within 24 hours. If test results from the analysis performed for total chromium reveal that the concentration is less than the limitations for `hexavalent chromium, then the test for hexavalent chromium may be eliminated for that day and reported as the same concentration as total chromium for that day.

[6] Mercury monitoring shall be conducted bi-monthly in the months of February, April, June, August, October, and December using EPA Test Method 1631, Revision E. If EPA Test Method 1631, Revision E is further revised during the term of this permit, the permittee and/or its contract laboratory is required to

utilize the most current version of the method as soon as possible after approval by EPA but no later than the second monitoring event after the revision.

The following EPA test methods and/or Standard Methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM.

Parameter	EPA Method	LOD	LOQ
Mercury	1631, Revision E	0.2 ng/l	0.5 ng/l

[7] The permittee is being given a three year schedule of compliance to either install the diffuser to create an alternate mixing zone with effluent limits based on the alternate mixing zone in Part I.A.2 or to install the treatment system necessary to achieve compliance with the final effluent limitations for Outfall 001 in Part I.A.1 based on water quality standards calculated without a mixing zone. The schedule of compliance is found in Part I.E.1 of the permit.

[8] The permittee is being given a five year schedule of compliance to achieve compliance with the final effluent limitations for Mercury at Outfall 001 regardless of whether a diffuser is installed to create an alternate mixing zone. The schedule of compliance is found in Part I.E.2 of the permit.

[9] The permittee shall conduct Whole Effluent Toxicity tests in accordance with Part I.G. of this permit.

[10] The permittee shall begin reporting the parameters listed above as soon as possible but not later than three months after the effective date of this permit.

2. During the period beginning on the date that the diffuser and alternate mixing zone is operational and lasting until the expiration date, the permittee is authorized to discharge from Outfall 005 (The discharge from the diffuser located in Lake Michigan). BP North America shall notify IDEM when the Alternate Mixing Zone (Outfall 005) is operational. The discharge is limited to treated process wastewater from the refinery and from Ineos and NiSource Whiting Clean Energy, recovered ground water and most of the storm water from the site. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into Lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS OUTFALL 005 [1][3]

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
BOD_5	4,161	8,164	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
TSS	4,925	7,723	lbs/day	Report	Report	mg/l	2 x Weekly	24 Hr. Comp.
COD	30,323	58,427	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Oil and Grease	1,368	2,600	lbs/day	Report	Report	mg/l	1 x Weekly	Grab
Phenolics (4AAP)	20.33	73.01	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Phosphorus	Report	Report	lbs/day	Report	1.0	mg/l	1 x Weekly	24 Hr. Comp.
Ammonia as N	1,584	3,572	lbs/day	Report	Report	mg/l	5 x Weekly	24 Hr. Comp.
Sulfide	23.1	51.4	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Total Chromium [4]	23.9	68.53	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Hex. Chromium [5]	2.01	4.48	lbs/day	Report	Report	mg/l	1 x Weekly	Grab
Total Vanadium [7]								
Interim	Report	Report	lbs/day	Report	Report	mg/l	1 x Monthly	24-Hr. Comp.
Final	50	100	lbs/day	0.28	0.56	mg/l	1 x Monthly	24-Hr. Comp.
Total Mercury [7]								
Interim	Report	Report	lbs/day	Report	Report	ng/l	2 x Yearly	Grab
Final [6]	0.00023	0.00057	lbs/day	1.3	3.2	ng/l	6 x Yearly	Grab
Whole Effluent Toxicity [8]								
Chronic	-	-	-	Report	-		TUc 2 x Yearly	
pH [2]					Report	s.u.	3 x Weekly	Grab

[1] In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 005, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[2] The pH of the effluent shall be no less than 6.0 and no greater than 9.0 standard units (s.u.).

[3] See Part I.B. of the permit for the Narrative Water Quality Standards.

[4] Chromium is to be analyzed by test method which will measure the total quantity.

[5] Hexavalent Chromium shall be measured and reported as dissolved metal. The Hexavalent Chromium sample type shall be grab method. The maximum holding time for a Hexavalent Chromium sample is 24 hours (40 CFR 136.6 Table IB). Therefore, the grab sample must be analyzed within 24 hours. If test results from the analysis performed for total chromium reveal that the concentration is less than the limitations for `hexavalent chromium, then the test for hexavalent chromium may be eliminated for that day and reported as the same concentration as total chromium for that day.

[6] Mercury monitoring shall be conducted bi-monthly in the months of February, April, June, August, October, and December using EPA Test Method 1631, Revision E. If EPA Test Method 1631, Revision E is further revised during the term of this permit, the permittee and/or its contract laboratory is required to utilize the most current version of the method as soon as possible after approval by EPA but no later than the second monitoring event after the revision. The following EPA test methods and/or Standard Methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM.

Parameter	EPA Method	LOD	LOQ
Mercury	1631, Revision E	0.2 ng/l	0.5 ng/l

[7] The permittee is being given a five year schedule of compliance to achieve compliance with the final effluent limitations for Vanadium and Mercury at Outfall 001. The schedule of compliance is found in Part I.E.2 of the permit.

[8] The permittee shall conduct Whole Effluent Toxicity tests in accordance with Part I.G. of this permit.

3. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge from Outfall 002. The discharge is limited to non-contact cooling water. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into Lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS OUTFALL 002 [1][3]

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
TOC (Intake)	-	-	-	Report	Report	mg/l	1 x Yearly	Grab
TOC (Discharge)	-	-	-	Report	Report	mg/l	1 x Yearly	Grab
TOC (Net)	-	-	-	Report	5.0 [5]	mg/l	1 x Yearly	Grab
Total Residual Chlorine [6][7]	20.0	60.0	lbs/day	0.01	0.02	mg/l	1 x Weekly	Grab
Oil & Grease	-	-	-	Report	5.0	mg/l	1 x Monthly	Grab
Temperature [4]								
Intake	-	-	-	Report	Report	F°/Hour	5 x Weekly	Hourly
Discharge	-	-	-	Report	Report	F°/Hour	5 x Weekly	Hourly
Net (daily ave.)	-	-	-	1.7×10^9	2.0×10^9	BTU/Hour	5 x Weekly	Hourly
pH	-	-	-	-	[2]	s.u.	3 x Weekly	Grab

[1] In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 002, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[2] The pH of the effluent shall be no less than 6.0 and no greater than 9.0 standard units (s.u.).

[3] See Part I.B. of the permit for the Narrative Water Quality Standards.

[4] The net temperature shall be calculated by subtracting the temperature value of the intake water from the temperature value of the gross discharge every hour converting to BTU/hr by multiplying the temperature difference by the discharge flow and the appropriate conversion factor and averaging those values over the 24 hours of each day when sampling occurs.

[5] Total Organic Carbon (TOC) shall be limited on a net basis. The net result shall be calculated by subtracting the concentration value of the intake water from the concentration value of the discharge from Outfall 002.

[6] The monthly average water quality based effluent limit (WQBEL) for total residual chlorine is less than the limit of quantitation (LOQ) as defined below. Compliance with the monthly average limit will be demonstrated if the monthly average effluent level is less than or equal to the monthly average WQBEL. Daily effluent values that are less than the LOQ, used to determine the monthly average effluent levels less than the LOQ, may be assigned a value of zero (0), unless, after considering the number of monitoring results that are greater than the limit of detection (LOD), and applying appropriate statistical techniques, a value other than zero (0) is warranted.

[7] The daily maximum WQBEL for total residual chlorine is equal to the LOD but less than the LOQ specified in the permit. Compliance with the daily maximum limit will be demonstrated if the observed effluent concentrations are less than the LOQ.

Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 60.0 lbs/day.

Parameter	Test Method	LOD	LOQ
Chlorine	4500-Cl-D,E or 4500-Cl-G	0.02 mg/l	0.06 mg/l

Case-Specific LOD/LOQ

The permittee may determine a case-specific LOD or LOQ using the analytical method specified above, or any other test method which is approved by the Commissioner prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner.

4. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge from Outfalls 003 and 004. The discharge is limited to non-process storm water. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Lake George Branch of the Indiana Harbor Ship Canal. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS OUTFALLS 003 and 004 [2][4]

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
TOC	-	-	-	Report	110	mg/l	1 x Weekly[3]	Grab
Oil & Grease	-	-	-	Report	15	mg/l	1 x Weekly[3]	Grab
pH	-	-	-	----	[1]	s.u.	1 x Weekly[3]	Grab

[1] The pH of the effluent shall be no less than 6.0 and no greater than 9.0 standard units (s.u.).

[2] See Part I.B. of the permit for the Narrative Water Quality Standards.

[3] The permittee shall sample TOC, Oil & Grease, and pH during the first discharge of each week. If there is no discharge during any particular week, then the permittee shall report No Discharge for that week on the monthly DMR.

[4] The permittee is required to develop and implement a Storm Water Pollution Prevention Plan (SWP3) as described in Part I. D of the permit. The permittee shall conduct a visual inspection at the outfall(s) on an annual basis. During visual inspections the permittee shall report the presence of turbidity, color, foam, solids, floatables, and oil sheen. The results of the visual inspections shall be recorded and maintained as part of the SWP3 plan. Visual inspections should allow for timely adjustments to be made to the SWP3. If BMPs are performing ineffectively, corrective action must be implemented. A set of tracking or follow-up procedures must be used to ensure that appropriate actions are taken in response to the examinations.

B. NARRATIVE WATER QUALITY STANDARDS

1. In accordance with 327 IAC 2-1.5-8, all waters at all times and at all places, including the mixing zone, shall meet the minimum conditions of being free from substances, materials, floating debris, oil, or scum attributable to the discharge:

   a. That will settle to form putrescent or otherwise objectionable deposits;

   b. That are in amounts sufficient to be unsightly or deleterious;

   c. That produce color, visible oil sheen, odor, or other conditions in such degree as to create a nuisance;

   d. Which are in amounts sufficient to be acutely toxic to , or to otherwise severely injure or kill aquatic life, other animals, plants, or humans

   e. Which are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae to such a degree as to create a nuisance, be unsightly, or otherwise impair the designated uses.

2. At all times, all waters outside the mixing zone shall be free of substances in concentrations which on the basis of available scientific data are believed to be sufficient to injure, be chronically toxic to, or be carcinogenic, mutagenic, or teratogenic to humans, animals, aquatic life, or plants.

C. MONITORING AND REPORTING

1. Representative Sampling

   Samples and measurements taken as required herein shall be representative of the volume and nature of the discharge.

2. Discharge Monitoring Reports

   a. For parameters with monthly average water quality based effluent limitations (WQBELs) below the LOQ, daily effluent values that are less than the limit of quantitation (LOQ) may be assigned a value of zero (0).

b. For all other parameters for which the monthly average WQBEL is equal to or greater than the LOQ, calculations that require averaging of measurements of daily values (both concentration and mass) shall use an arithmetic mean. When a daily discharge value is below the LOQ, a value of zero (0) shall be used for that value in the calculation to determine the monthly average unless otherwise specified or approved by the Commissioner.

c. Effluent concentrations less than the LOD shall be reported on the Discharge Monitoring Report (DMR) forms as < (less than) the value of the LOD. For example, if a substance is not detected at a concentration of 0.1 µg/l, report the value as <0.1 µg/l.

d. Effluent concentrations greater than or equal to the LOD and less than the LOQ that are reported on a DMR shall be reported as the actual value and annotated on the DMR to indicate that the value is not quantifiable.

e. Mass discharge values which are calculated from concentrations reported as less than the value of the limit of detection shall be reported as less than the corresponding mass discharge value.

f. Mass discharge values that are calculated from effluent concentrations greater than the limit of detection shall be reported as the calculated value.

The permittee shall submit federal and state discharge monitoring reports to the Indiana Department of Environmental Management containing results obtained during the previous month which shall be postmarked no later than the 28th day of the month following each completed monitoring period. The first report shall be submitted by the 28th day of the month following the month in which the permit becomes effective.

The Regional Administrator may request the permittee to submit monitoring reports to the Environmental Protection Agency if it is deemed necessary to assure compliance with the permit.

3. Definitions

a. Monthly Average

(1) Mass Basis - The "monthly average" discharge means the total mass discharge during a calendar month divided by the number of days in the month that the production or commercial facility was discharging. Where less than daily

samples is required by this permit, the monthly average discharge shall be determined by the summation of the measured daily mass discharges divided by the number of days during the calendar month when the measurements were made.

(2) Concentration Basis - The "monthly average" concentration means the arithmetic average of all daily determinations of concentration made during a calendar month. When grab samples are used, the daily determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during the calendar day.

b. "Daily Discharge"

(1) Mass Basis – The "daily discharge" means the total mass discharge by weight during any calendar day.

(2) Concentration Basis – The "daily discharge" means the average concentration over the calendar day or any twenty-four (24) hour period that reasonably represents the calendar day for the purposes of sampling.

c. "Daily Maximum"

(1) Mass Basis – The "daily maximum" means the maximum daily discharge mass value for any calendar day.

(2) Concentration Basis – The "daily maximum" means the maximum daily discharge value for any calendar day.

(3) Temperature Basis – The "daily maximum" means the highest temperature value measured for any calendar day.

d. A 24-hour composite sample consists of at least twenty four (24) individual aliquots of wastewater by the grab sample method or by an automatic sampler, which are taken at approximately equally spaced time intervals for the duration of the discharge within a 24-hour period and which are combined prior to analysis

e. Concentration -The weight of any given material present in a unit volume of liquid. Unless otherwise indicated in this permit, concentration values shall be expressed in milligrams per liter (mg/l).

f. The "Regional Administrator" is defined as the Region V Administrator, U.S. EPA, located at 77 West Jackson Boulevard, Chicago, Illinois 60604.

g. The "Commissioner" is defined as the Commissioner of the Indiana Department of Environmental Management, which is located at the following address: 100 North Senate Avenue, Indianapolis, Indiana 46204.

h. "Limit of Detection or LOD" means a measurement of the concentration of a substance that can be measured and reported with ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) for a particular analytical method and sample matrix. The LOD is equivalent to the method detection level or MDL.

i. "Limit of Quantitation or LOQ" means a measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calibrated at a specified concentration above the method detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant. This term is also sometimes called limit quantification or quantification level.

j. "Method Detection Level or MDL" means the minimum concentration of an analyte (substance) that can be measured and reported with a ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) as determined by procedure set forth in 40 CFR 136, Appendix B. The method detection level or MDL is equivalent to the LOD.

k. "Toxic Unit–Acute (TU_a)" is defined as $100/LC_{50}$ where the LC_{50} is expressed as a percent effluent in the test medium of an acute whole effluent toxicity (WET) test that is statistically or graphically estimated to be lethal to fifty percent (50%) of the test organisms.

l. "Inhibition concentration 25" or "IC_{25}" means the toxicant concentration that would cause a twenty-five percent (25%) reduction in a nonquantal biological measurement for the test population. For example, the IC_{25} is the concentration of toxicant that would cause a twenty-five percent (25%) reduction in mean young per female or in growth for the test population.

m. "Toxic Unit–Chronic (TU_c)" is defined as 100/NOEC or 100/LC_{25}.

n. "No Observed Effect Concentration (NOEC)" is the highest tested concentration of an effluent or test sample whose effect is not different from the control effect, according to the statistical test used. The NOEC is usually the highest tested concentration of an effluent or toxic that causes no observable adverse effect on the test organisms (i.e., the highest concentration of toxicity at which the values for the observed responses do not statistically differ from the controls).

4. Test Procedure

The analytical and sampling methods used shall conform to the current version of 40 CFR 136. Multiple editions of Standard Methods for the Examination of Water and Wastewater are currently approved for most methods, however, 40 CFR Part 136 should be checked to ascertain if a particular method is approved for a particular analyte. The approved methods may be included in the texts listed below. However, different but equivalent methods are allowable if they receive the prior written approval of the Commissioner and the U.S. Environmental Protection Agency.

a. Standard Methods for the Examination of Water and Wastewater 18th, 19th, or 20th Editions, 1992, 1995, or 1998, American Public Health Association, Washington, D.C. 20005.

b. A.S.T.M. Standards, Parts 23, Water; Atmosphere Analysis 1972 American Society for Testing and Materials, Philadelphia, PA 19103.

c. Methods for Chemical Analysis of Water and Wastes June 1974, Revised, March 1983, Environmental Protection Agency, Water Quality Office, Analytical Quality Control Laboratory, 1014 Broadway, Cincinnati, OH 45202.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The exact place, date, and time of sampling;

b. The person(s) who performed the sampling or measurements;

c. The dates the analyses were performed;

d The person(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of all required analyses and measurements.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant listed in Part I.A at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of this monitoring shall be included in the calculation and reporting of the values required in the monthly Discharge Monitoring Report (DMR). Such increased frequency shall also be indicated. Other monitoring data not specifically required in this permit (such as internal process or internal waste stream data) which is collected by or for the permittee need not be submitted unless requested by the Commissioner.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years. In cases where the original records are kept at another location, a copy of all such records shall be kept at the permitted facility. The three years shall be extended:

a. automatically during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or regarding promulgated effluent guidelines applicable to the permittee; or

b. as requested by the Regional Administrator or the Indiana Department of Environmental Management.

D. STORM WATER POLLUTION PREVENTION PLAN

1. Development of Plan

Within 18 months from the effective date of this permit, the permittee is required to develop and implement a Storm Water Pollution Prevention Plan (SWP3) for the permitted facility. The plan shall at a minimum include the following:

a. Identify potential sources of pollution, which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility. Storm water associated with industrial activity (defined in 40 CFR 122.26(b)) includes, but is not limited to, the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing or materials storage areas at an industrial plant;

b. Describe practices and measure to be used in reducing the potential for pollutants to be exposed to storm water; and

c. Assure compliance with the terms and conditions of this permit.

Notwithstanding any other provision of this permit, the SWP3 is not required to address storm water discharges that are routed to treatment and then discharged through Outfall 001 or Outfall 005.

2. Contents

The plan shall include, at a minimum, the following items:

a. Pollution Prevention Team -The plan shall list, by position title, the member or members of the facility organization as members of a storm water Pollution Prevention Team who are responsible for developing the storm water pollution prevention plan (SWP3) and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each storm water pollution prevention team member.

b. Description of Potential Pollutant Sources – The plan shall provide a description of areas at the site exposed to industrial activity and have a reasonable potential for storm water to be exposed to pollutants. The plan shall identify all activities and significant materials (defined in 40 CFR 122.26(b)), which may potentially be significant pollutant sources. As a minimum, the plan shall contain the following:

(1) A soils map indicating the types of soils found on the facility property and showing the boundaries of the facility property.

(2) A graphical representation, such as an aerial photograph or site layout maps, drawn to an appropriate scale, which

contains a legend and compass coordinates, indicating, at a minimum, the following:

(A) All on-site storm water drainage and discharge conveyances, which may include pipes, ditches, swales, and erosion channels, related to a storm water discharge.

(B) Known adjacent property drainage and discharge conveyances, if directly associated with run-off from the facility.

(C) All on-site and known adjacent property water bodies, including wetlands and springs.

(D) An outline of the drainage area for each outfall.

(E) An outline of the facility property, indicating directional flows, via arrows, of surface drainage patterns.

(F) An outline of impervious surfaces, which includes pavement and buildings, and an estimate of the impervious and pervious surface square footage for each drainage area placed in a map legend.

(G) On-site injection wells, as applicable.

(H) On-site wells used as potable water sources, as applicable.

(I) All existing major structural control measures to reduce pollutants in storm water run-off.

(J) All existing and historical underground or aboveground storage tank locations, as applicable.

(K) All permanently designated plowed or dumped snow storage locations.

(L) All loading and unloading areas for solid and liquid bulk materials.

(M) All existing and historical outdoor storage areas for

raw materials, intermediary products, final products, and waste materials.

(N) All existing or historical outdoor storage areas for fuels, processing equipment, and other containerized materials, for example, in drums and totes.

(O) Outdoor processing areas.

(P) Dust or particulate generating process areas.

(Q) Outdoor assigned waste storage or disposal areas.

(R) Pesticide or herbicide application areas.

(S) Vehicular access roads.

The mapping of historical locations is only required if the historical locations have a reasonable potential for storm water exposure to historical pollutants.

(3) An area site map that indicates:

(A) The topographic relief or similar elevations to determine surface drainage patterns;

(B) The facility boundaries;

(C) All receiving waters; and

(D) All known drinking water wells; and

Includes at a minimum, the features in clauses (A), (C), and (D) within a one-fourth (1/4) mile radius beyond the property boundaries of the facility. This map must be to scale and include a legend and compass coordinates.

(4) A narrative description of areas that generate storm water discharges exposed to industrial activity including descriptions for any existing or historical areas listed in subdivision 2.b.(2)(J) through (S) of this Part, and any other areas thought to generate storm water discharges exposed to industrial activity. The narrative descriptions for each

identified area must include the following:

(A) Type and typical quantity of materials present in the area.

(B) Methods of storage, including presence of any secondary containment measures.

(C) Any remedial actions undertaken in the area to eliminate pollutant sources or exposure of storm water to those sources. If a corrective action plan was developed, the type of remedial action and plan date shall be referenced.

(D) Any significant release or spill history dating back a period of three (3) years from the effective date of this permit, in the identified area, for materials spilled outside of secondary containment structures and impervious surfaces in excess of their CERCLA reportable quantity, including the following:

i. The date and type of material released or spilled.

ii. The estimated volume released or spilled.

iii. A description of the remedial actions undertaken, including disposal or treatment.

Depending on the adequacy or completeness of the remedial actions, the spill history shall be used to determine additional pollutant sources that may be exposed to storm water. In subsequent permit terms, the history shall date back for a period of five (5) years from the date of the permit renewal application.

(E) Where the chemicals or materials have the potential to be exposed to storm water discharges, the descriptions for each identified area must include a risk identification analysis of chemicals or materials stored or used within the area. The analysis must include the following:

i. Toxicity data of chemicals or materials used

within the area, referencing appropriate material safety data sheet information locations.

ii. The frequency and typical quantity of listed chemicals or materials to be stored within the area.

iii. Potential ways in which storm water discharges may be exposed to listed chemicals and materials.

iv. The likelihood of the listed chemicals and materials to come into contact with water.

(5) A narrative description of existing and planned management practices and measures to improve the quality of storm water run-off entering a water of the state. Descriptions must be created for existing or historical areas listed in subdivision 2.b.(2)(J) through (S) and any other areas thought to generate storm water discharges exposed to industrial activity. The description must include the following:

(A) Any existing or planned structural and nonstructural control practices and measures.

(B) Any treatment the storm water receives prior to leaving the facility property or entering a water of the state.

(C) The ultimate disposal of any solid or fluid wastes collected in structural control measures other than by discharge.

(6) If applicable, the specific control practices and measures for potential pollutant source areas must include the following:

(A) Identification of areas that, due to topography, activities, or other factors, have a high potential for significant soil erosion and identify and implement measures to limit erosion.

(B) A plan to cover, or otherwise reduce the potential

for pollutants in storm water discharge from deicing salt and sand or other commercial or industrial material storage piles, except for exposure resulting from the addition or removal of materials from the pile. For piles that do not have the potential for polluting storm water run-off, the plan needs to provide the basis for determining no exposure potential. The plan must be included in the SWP3.

(C) Storage piles of sand and salt or other commercial or industrial materials must be stored in a manner to reduce the potential for polluted storm water run-off and in accordance with the plan required under clause (B).

(7) Information or other documentation required under subsection (d) of this plan.

(8) The results of storm water monitoring. The monitoring data must include completed field data sheets, chain-of-custody forms, and laboratory results. If the monitoring data are not placed into the facility's SWP3, the on-site location for storage of the information must be reference in the SWP3.

c. Measures and Practices – For areas of the facility that generate storm water discharges and have a potential for storm water exposure to pollutants, storm water exposure to pollutants must be minimized. To ensure this reduction, the following practices and measure must be planned and implemented:

(1) A written preventative maintenance program, including the following:

(A) Implementation of good housekeeping practices to ensure the facility will be operated in a clean and orderly manner and that pollutants will not have the potential to be exposed to storm water via vehicle tracking or other means.

(B) Maintenance of storm water management measures, for example, catch basins or the cleaning of oil and water separators. All maintenance must be documented and either contained in, or have the on-site record keeping location referenced in, the

SWP3.

(C) Inspection and testing of facility equipment and systems that are in areas of the facility that generate storm water discharges and have a reasonable potential for storm water exposure to pollutants to ensure appropriate maintenance of such equipment and systems and to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters.

(D) At a minimum, quarterly inspections of the storm water management measures and storm water run-off conveyances. Inspections must be documented and either contained in, or have the on-site record keeping location referenced in, the SWP3.

(E) An employee training program to inform personnel at all levels of responsibility that have the potential to engage in industrial activities that impact storm water quality of the components and goals of the SWP3. Training must occur at a minimum annually and should address topics such as spill response, good housekeeping, and material management practices. All employee training sessions, including relevant storm water topics discussed and a roster of attendees, must be documented and either contained in, or have the on-site record keeping location referenced in, the SWP3.

(2) A written spill response program, including the following:

(A) Location, description, and quantity of all response materials and equipment.

(B) Response procedures for facility personnel to respond to a release.

(C) Contact information for reporting spills, both for facility staff and external emergency response entities.

(3) A written non-storm water assessment, including the following:

(A) A certification letter stating that storm water discharges entering a water of the state have been evaluated for the presence of illicit discharges and non-storm water contributions.

(B) Detergent or solvent-based washing of equipment or vehicles that would allow washwater additives to enter any storm water only drainage system shall not be allowed at this facility unless appropriately permitted under this NPDES permit.

(C) All interior maintenance area floor drains with the potential for maintenance fluids or other materials to enter storm water only storm sewers must be either sealed, connected to a sanitary sewer with prior authorization, or appropriately permitted under this NPDES permit. The sealing, sanitary sewer connecting, or permitting of drains under this item must be documented in the written non-storm water assessment program.

(D) The certification shall include a description of the method used, the date of any testing, and the on-site drainage points that were directly observed during the test.

(4) Management of Runoff, including the following:

(A) The plan shall contain a narrative consideration of the appropriateness of storm water management practices (practices other than those which control the generation or sources of pollutants) used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site.

(B) The plan shall provide for the implementation and maintenance of measures that the permittee determines to be reasonable and appropriate. The potential of various sources at the facility to contribute pollutants to storm water discharges associated with industrial activity shall be considered when determining reasonable and appropriate measures.

(C) Examples of appropriate measures or other equivalent measures may include (but are not limited to): vegetative swales and practices, reuse of collected storm water (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), snow management activities, infiltration devices, and wet detention/retention devices.

d. Comprehensive Site Compliance Evaluation – Qualified personnel shall conduct a comprehensive site compliance evaluation, at least once per year, to confirm the accuracy of the description of potential pollution sources contained in the plan, determine the effectiveness of the plan, and assess compliance with the permit. Such evaluations shall provide:

(1) Areas contributing to a storm water discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measure, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.

(2) Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with Part I.D.2.b of this permit and pollution prevention measures and controls identified in the plan in accordance with Part I.D.2.c. of this permit shall be revised as appropriate within 4 weeks of such evaluation and shall provide for implementation of any changes to the plan in a timely manner, but in no case more than 12 weeks after the evaluation.

(3) A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with the above

paragraph must be documented and either contained in, or have on-site record keeping location referenced in, the SWP3 for at least 3 years after the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with the signatory requirements of Part II.C.6 of this permit.

(4) Where compliance evaluation schedules overlap the inspections required under Part I.D.2.c.(1)(D), the compliance evaluation may be conducted in place of one such inspection.

e. General Requirements – The SWP3 must meet the following general requirements:

(1) The plan shall be certified by a qualified professional. The term qualified professional means an individual who is trained and experienced in water treatment techniques and related fields as may be demonstrated by state registration, professional certification, or completion of course work that enable the individual to make sound, professional judgments regarding storm water control/treatment and monitoring, pollutant fate and transport, and drainage planning.

(2) The plan shall be retained at the facility and be available for review by a representative of the Commissioner upon request.

(3) The plan must be completed and implemented on or before eighteen (18) months from the effective date of this permit. The Commissioner may grant an extension of this time frame based on a request by the person showing reasonable cause.

(4) The permittee shall amend the plan by either of the following:

(A) Whenever there is a change in design, construction, operation, or maintenance at the facility, which may have a significant effect on the potential for the

discharge of pollutants to surface waters of the state.

(B) Upon written notice by the Commissioner that the SWP3 proves to be ineffective in controlling pollutants in storm water discharges exposed to industrial activity. Within sixty (60) days of such notification from the Commissioner, the permittee shall make the required changes to the SWP3 and shall submit the amended plan to the Commissioner for review.

(5) If the permittee has other written plans, required under applicable federal or state law, such as operation and maintenance, spill prevention control and countermeasures (SPCC), or risk contingency plans, which fulfill certain requirements of an SWP3, these plans may be referenced, at the permittee's discretion, in the appropriate sections of the SWP3 to meet those section requirements.

(6) The permittee may combine the requirements of the SWP3 with another written plan if:

(A) The plan is retained at the facility and available for review;

(B) All the requirements of the SWP3 are contained within the plan; and

(C) A separate, labeled section is utilized in the plan for the SWP3 requirements.

E. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for, Ammonia as N, Benzo (a) pyrene, Chloride, Total Chromium, Hex. Chromium, Total Copper, TDS, Fluoride, Total Lead, Total Selenium, Total Strontium, Sulfate, Total Vanadium (Part I.A.1) and Whole Effluent Toxicity at Outfall 001 in accordance with the following schedule:

a. The permittee shall submit a written progress report to the Compliance Evaluation Section of the Office of Water Quality

(OWQ) nine (9) months from the effective date of this permit. The progress report shall include a description of the method(s) selected for meeting the newly imposed limitation for Ammonia as N, Benzo (a) pyrene, Chloride, Total Chromium, Hex. Chromium, Total Copper, TDS, Fluoride, Total Lead, Total Selenium, Total Strontium, Sulfate, Total Vanadium (Part I.A.1) and Whole Effluent Toxicity, in addition to any other relevant information. The progress report shall also include a specific time line specifying when each of the steps will be taken. The new effluent limits for Ammonia as N, Benzo (a) pyrene, Chloride, Total Chromium, Hex. Chromium, Total Copper, TDS, Fluoride, Total Lead, Total Selenium, Total Strontium, Sulfate, Total Vanadium (Part I.A.1) and Whole Effluent Toxicity are deferred for the term of this compliance schedule, unless the new effluent limits can be met at an earlier date. The permittee shall notify the Compliance Evaluation Section of OWQ as soon as the newly imposed effluent limits for Ammonia as N, Benzo (a) pyrene, Chloride, Total Chromium, Hex. Chromium, Total Copper, TDS, Fluoride, Total Lead, Total Selenium, Total Strontium, Sulfate, Total Vanadium (Part I.A.1) and Whole Effluent Toxicity can be met. Upon receipt of such notification by OWQ, the final limits for Ammonia as N, Benzo (a) pyrene, Chloride, Total Chromium, Hex. Chromium, Total Copper, TDS, Fluoride, Total Lead, Total Selenium, Total Strontium, Sulfate, Total Vanadium (Part I.A.1) and Whole Effluent Toxicity will become effective, but no later than thirty-six (36) months from the effective date of this permit. Monitoring and reporting of the effluent for these parameters is required during the interim period.

b. The permittee shall submit a subsequent progress report to the Compliance Evaluation Section of OWQ no later than eighteen (18) months from the effective date of this permit. This report shall include detailed information on the steps the permittee has taken to achieve compliance with the final effluent limitations and whether the permittee is meeting the time line set out in the initial progress report.

c. The permittee shall submit a subsequent progress report to the Compliance Evaluation Section of OWQ no later than twenty-seven (27) months from the effective date of this permit. This report shall include detailed information on the steps the permittee has taken to achieve compliance with the final effluent limitations and whether the permittee is meeting the time line set out in the initial progress report.

d. Within thirty (30) days of completion of construction, the permittee shall file with the Industrial NPDES Permits Section of OWQ a notice of installation for the additional pollutant control equipment and a design summary of any modifications.

e. The permittee shall comply with the final effluent limitations for Ammonia as N, Benzo (a) pyrene, Chloride, Total Chromium, Hex. Chromium, Total Copper, TDS, Fluoride, Total Lead, Total Selenium, Total Strontium, Sulfate, Total Vanadium (Part I.A.1) and Whole Effluent Toxicity at Outfall 001 no later than thirty-six (36) months from the effective date of this permit unless the permittee has an operational alternate mixing zone prior to that date. When the permittee has notified IDEM that the alternate mixing zone is operational, the effluent limits at Outfall 005 for Ammonia as N, Benzo (a) pyrene, Chloride, Total Chromium, Hex. Chromium, Total Copper, TDS, Fluoride, Total Lead, Total Selenium, Total Strontium, Sulfate, Total Vanadium (Part I.A.1) and Whole Effluent Toxicity found in Part I.A.2 will become effective

2. The permittee shall achieve compliance with the effluent limitations specified for Total Vanadium (Part I.A.2) and Total Mercury (Part I.A.1 or Part I.A.2) at Outfall 001 and Outfall 005 in accordance with the following schedule:

a. The permittee shall submit a written progress report to the Compliance Evaluation Section of the Office of Water Quality (OWQ) twelve (12) months from the effective date of this permit. The progress report shall include a description of the method(s) selected for meeting the newly imposed limitation for Total Vanadium and Total Mercury, in addition to any other relevant information. The progress report shall also include a specific time line specifying when each of the steps will be taken. The new effluent limits for Total Vanadium and Total Mercury are deferred for the term of this compliance schedule, unless the new effluent limits can be met at an earlier date. The permittee shall notify the Compliance Evaluation Section of OWQ as soon as the newly imposed effluent limits for Total Vanadium and Total Mercury can be met. Upon receipt of such notification by OWQ, the final limits for Total Vanadium and Total Mercury will become effective, but no later than sixty (60) months from the effective date of this permit. Monitoring and reporting of the effluent for these parameters is required during the interim period.

b. The permittee shall submit a subsequent progress report to the Compliance Evaluation Section of OWQ no later than twenty-four (24) months from the effective date of this permit. This report shall include detailed information on the steps the permittee has taken to achieve compliance with the final effluent limitations and whether the permittee is meeting the time line set out in the initial progress report.

c. If the permittee decides to conduct the studies necessary to develop a Tier I criterion or to modify the Tier II value for Total Vanadium, those studies shall be submitted to the Compliance Evaluation Section, Office of Water Management (OWM) no later than two years after the effective date of the permit.

d. If the permittee has submitted the studies in accordance with Part c., above, and if the commissioner has not made a final determination to issue or deny a permit revision based on these studies no later than nine (9) months after the submittal or thirty-three (33) months after the effective date of the permit, whichever is earlier, then the request for the revised limit is deemed to be denied. This decision is appealable in accordance with IC 13-4-21.5-3-7 and IC 13-15-6.

e. The permittee shall submit a subsequent progress report to the Compliance Evaluation Section of OWQ no later than thirty-six (36) months from the effective date of this permit. This report shall include detailed information on the steps the permittee has taken to achieve compliance with the final effluent limitations and whether the permittee is meeting the time line set out in the initial progress report.

f. The permittee shall submit a subsequent progress report to the Compliance Evaluation Section of OWQ no later than forty-eight (48) months from the effective date of this permit. This report shall include detailed information on the steps the permittee has taken to achieve compliance with the final effluent limitations and whether the permittee is meeting the time line set out in the initial progress report.

g. Within thirty (30) days of completion of construction, the permittee shall file with the Industrial NPDES Permits Section of OWQ a notice of installation for the additional pollutant control equipment and a design summary of any modifications.

h. The permittee shall comply with the final effluent limitations for Total Vanadium and Total Mercury no later than sixty (60) months from the effective date of this permit.

3. If the permittee fails to comply with any deadline contained in the foregoing schedules, the permittee shall, within fourteen (14) days following the missed deadline, submit a written notice of noncompliance to the Compliance Evaluation Section of the OWQ stating the cause of noncompliance, any remedial action taken or planned, and the probability of meeting the date fixed for compliance with final effluent limitations.

F. REOPENING CLAUSES

This permit may be modified, or alternately, revoked and reissued, after public notice and opportunity for hearing:

1. to comply with any applicable effluent limitation or standard issued or approved under 301(b)(2)(C),(D) and (E), 304 (b)(2), and 307(a)(2) of the Clean Water Act, if the effluent limitation or standard so issued or approved:

   a. contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

   b. controls any pollutant not limited in the permit.

2. to incorporate any of the reopening clause provisions cited at 327 IAC 5-2-16.

3. to incorporate increased monthly average and daily maximum effluent limitations for ammonia as N for Outfall 005 based on a 95th Percentile Probability Basis for the monthly average and a 99th Percentile Probability Basis for the daily maximum using effluent data after the refinery has been re-configured to process Canadian Extra Heavy Crude Oil. The permittee is not required to make a new demonstration, under 327 IAC 5-2-11.7, that the discharge is necessary and that it supports social or economic development in the area of the discharge. It is also not necessary to support the provisions in 327 IAC 5-2-10(11)(B)(i) for any proposed increase in the effluent limitations for ammonia that is attributable to the same action which resulted in the increased discharge limitations for ammonia contained in this permit. The permittee must demonstrate that any proposed increase in effluent limits for ammonia is based on new information that was not available at the time of this permits issuance. The increased discharge limits shall be limited to the minimum necessary and must comply with the more stringent of effluent limitation guidelines and water quality standards.

4. This permit may be modified, or, alternately, revoked and reissued, to comply with any applicable standards, regulations and requirements issued or approved under section 316(b) of the Clean Water Act, if the standards, regulations and requirements so issued or approved contains different conditions than those in this permit.

G. CHRONIC BIOMONITORING PROGRAM REQUIREMENTS

The 1977 Clean Water Act explicitly states, in Section 101(3) that it is the national policy that the discharge of toxic amounts be prohibited. In support of this policy the U.S. EPA in 1995 amended 40 CFR 136.3 (Tables IA and II) by adding testing method for measuring acute and short-term chronic toxicity of whole effluents and receiving waters. To adequately assess the character of the effluent, and the effects of the effluent on aquatic life, the permittee shall conduct Whole Effluent Toxicity Testing. Part 1 of this section describes the testing procedures, Part 2 describes the Toxicity Reduction Evaluation which is only required if the effluent demonstrated toxicity, as described in paragraph 1.f.

1. Whole Effluent Toxicity Tests

The permittee shall conduct bioassay tests described below to monitor the toxicity of the discharge from Outfall 001 and Outfall 005. If toxicity is demonstrated as defined under paragraph f. below, the permittee is required to conduct a toxicity reduction evaluation (TRE).

a. Bioassay Test Procedures and Data Analysis

(1) All test organisms, test procedures and quality assurance criteria used shall be in accordance with the Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms; Fourth Edition Section 11, Fathead Minnow (Pimephales promelas) Larval Survival and Growth Test Method, (1000.0) EPA 821-R-02-013, October 2002, or most recent update.

(2) Any circumstances not covered by the above methods, or that require deviation from the specified methods shall first be approved by the IDEM's Environmental Toxicology and Chemistry Section.

(3) The determination of effluent toxicity shall be made in accordance with the Data Analysis general procedures for chronic toxicity endpoints as outlined in Sections 11 and 13 of the respective Test Method (1000.0 and 1002.0) of